

Claims

- [c1] A system for introducing informational attributes suited for selective inclusion within image headers that are selectively storable in a database together with pixel data of associated images produced by an imaging apparatus, said system comprising:
- an interactive workstation computer system electrically connectable to the database, electrically connectable to the imaging apparatus, and comprising memory-stored software applications for operating said imaging apparatus;
 - a memory-stored updatable table of defined informational attributes suited for selective inclusion within image headers;
 - an interactive computer for generating software files of image header definitions from said table of defined informational attributes; and
 - a means to transport said software files of image header definitions to said interactive workstation computer system.
- [c2] A system according to claim 1, wherein said interactive workstation computer system is suited for executing said

software applications to thereby deliver operation control signals to said imaging apparatus, acquire raw data of images produced by said imaging apparatus, process said raw data, read said software files of image header definitions, generate image headers that selectively include informational attributes as specified by said software files, display said image headers together with associated digital images indirectly produced by said imaging apparatus, and selectively store said image headers together with pixel data of said associated digital images in said database.

- [c3] A system according to claim 2, wherein said interactive workstation computer system comprises software for supporting InfoBus data exchanges to thereby facilitate the selective inclusion of informational attributes within generated image headers.
- [c4] A system according to claim 1, wherein said interactive workstation computer system comprises software for supporting a JavaTM virtual machine.
- [c5] A system according to claim 1, wherein said memory-stored software applications are written in an object-oriented programming language.
- [c6] A system according to claim 1, wherein said interactive

computer comprises software for selectively creating newly defined informational attributes and selectively modifying previously defined informational attributes to thereby update said table of defined informational attributes.

[c7] A system according to claim 1, wherein said interactive computer comprises spreadsheet application software for both updating and maintaining said table of defined informational attributes.

[c8] A system according to claim 1, wherein said interactive computer for generating software files of image header definitions comprises at least one software application tool.

[c9] A system according to claim 1, wherein said means to transport said software files of image header definitions comprises an electrical communications network, and wherein said electrical communications network includes at least one network selected from the group consisting of a local area network, a wide area network, an Ethernet-based network, and the Internet.

[c10] A system, according to claim 1, further comprising an interactive computer system comprising software for creating and modifying defined informational attributes

and simulating application software driven operation of said imaging apparatus.

- [c11] A system according to claim 10, wherein said interactive computer system is suited for selectively creating newly defined informational attributes, selectively modifying previously defined informational attributes, and simulating application software driven operation of said imaging apparatus to thereby test newly created and modified informational attributes for desirability and compatibility with application software.
- [c12] A system according to claim 10, wherein said interactive computer and said interactive computer system are substantially integrated and coextensive with each other.
- [c13] A system according to claim 10, wherein said interactive computer system comprises a processor, a display monitor, a keyboard, a pointing device, and visually oriented application development software.
- [c14] A system according to claim 13, wherein said pointing device is suited for performing both point-and-click and drag-and-drop operations on the screen of said display monitor of said interactive computer system to thereby selectively create newly defined informational attributes and selectively modify previously defined informational

attributes.

- [c15] A system for introducing informational attributes suited for selective inclusion within image headers that are selectively storable in a database together with pixel data of associated images produced by an imaging apparatus, said system comprising:
- a database for retaining image headers and pixel data of associated images for storage and selective retrieval;
 - an imaging apparatus;
 - a server computer electrically connected to said database and suited for collecting pixel data of digital images, generating image headers, and storing said image headers together with said pixel data in said database;
 - a network of additional server computers electrically connected to said server computer, electrically connected to said imaging apparatus, and suited for delivering operation control signals to said imaging apparatus, acquiring raw data of images produced by said imaging apparatus, processing said raw data, and delivering pixel data associated with said raw data to said server computer;
 - an interactive workstation computer electrically connected to said server computer, electrically connected to said network of additional server computers, and comprising memory-stored software applications for operat-

ing said server computer, said network of additional server computers, and said imaging apparatus;
a memory-stored updatable table of defined informational attributes suited for selective inclusion within image headers;
an interactive computer system comprising software for creating and modifying defined informational attributes and simulating application software driven operation of said imaging apparatus;
an interactive computer for generating software files of image header definitions from said table of defined informational attributes; and
a means to transport said software files of image header definitions to said interactive workstation computer;
wherein said interactive computer system selectively creates newly defined informational attributes, selectively modifies previously defined informational attributes, and simulates application software driven operation of said imaging apparatus to thereby test newly created and modified informational attributes for desirability and compatibility with application software;
wherein said interactive computer selectively includes said newly created and modified informational attributes in said table of defined informational attributes to thereby update said table; and
wherein said interactive workstation computer executes

said software applications to deliver operation control signals to said imaging apparatus, acquires raw data of images produced by said imaging apparatus, processes said raw data, read said software files of image header definitions, generates image headers that selectively include informational attributes as specified by said software files, displays said image headers together with associated digital images indirectly produced by said imaging apparatus, and selectively stores said image headers together with pixel data of said associated digital images in said database.

- [c16] A system according to claim 15, wherein said database comprises a storage medium selected from the group consisting of a magnetic tape, a magnetic disk, a magneto-optical disk, an optical disk, a floptical disk, a floppy disk, a Zip disk, a hard disk, a disk cartridge, a tape cassette, a compact disc, and a digital versatile disc.
- [c17] A system according to claim 15, wherein said imaging apparatus is selected from the group consisting of a computerized tomography imaging apparatus, a magnetic resonance imaging apparatus, an ultrasound imaging apparatus, and an x-ray imaging apparatus.
- [c18] A system according to claim 15, wherein said server computer and said interactive workstation computer are

substantially integrated and coextensive with each other.

- [c19] A system according to claim 18, wherein said network of additional server computers comprises direct memory access hardware interfaced with both said server computer and said interactive workstation computer as integrated.
- [c20] A system according to claim 15, wherein said network of additional server computers comprises software for supporting a real time operating system.
- [c21] A method for introducing informational attributes suited for selective inclusion within image headers that are selectively storable in a database together with pixel data of associated images produced by an imaging apparatus, said method comprising the steps of:
 - (a) generating software files of image header definitions from a memory-stored updatable table of defined informational attributes suited for selective inclusion within image headers; and
 - (b) transporting said software files of image header definitions to an interactive workstation computer system comprising memory-stored software applications for operating the imaging apparatus.
- [c22] A method according to claim 21, said method further

comprising the step of:

(c) utilizing said interactive workstation computer system to execute said software applications to thereby deliver operation control signals to said imaging apparatus, acquire raw data of images produced by said imaging apparatus, process said raw data, read said software files of image header definitions, generate image headers that selectively include informational attributes as specified by said software files, display said image headers together with associated digital images indirectly produced by said imaging apparatus, and selectively store said image headers together with pixel data of said associated digital images in the database.

[c23] A method for introducing informational attributes suited for selective inclusion within image headers that are selectively storable in a database together with pixel data of associated images produced by an imaging apparatus, said method comprising the steps of:

(a) utilizing software to selectively create newly defined informational attributes and selectively modify previously defined informational attributes to thereby update a memory-stored updatable table of defined informational attributes suited for selective inclusion within image headers;

(b) generating software files of image header definitions

from said table of defined informational attributes; and
(c) transporting said software files of image header definitions to an interactive workstation computer system comprising memory-stored software applications for operating the imaging apparatus.

[c24] A method according to claim 23, said method further comprising the step of:
(d) utilizing said interactive workstation computer system to execute said software applications to thereby deliver operation control signals to said imaging apparatus, acquire raw data of images produced by said imaging apparatus, process said raw data, read said software files of image header definitions, generate image headers that selectively include informational attributes as specified by said software files, display said image headers together with associated digital images indirectly produced by said imaging apparatus, and selectively store said image headers together with pixel data of said associated digital images in the database.

[c25] A method for introducing informational attributes suited for selective inclusion within image headers that are selectively storable in a database together with pixel data of associated images produced by an imaging apparatus, said method comprising the steps of:
(a) utilizing software for creating and modifying defined

informational attributes and simulating application software driven operation of the imaging apparatus to thereby selectively create newly defined informational attributes, selectively modify previously defined informational attributes, and simulate application software driven operation of said imaging apparatus to thereby test newly created and modified informational attributes for desirability and compatibility with application software; and

(b) selectively including said newly created and modified informational attributes in a memory-stored updatable table of defined informational attributes suited for selective inclusion within image headers.

[c26] A method according to claim 25, said method further comprising the steps of:

(c) generating software files of image header definitions from said table of defined informational attributes; and

(d) transporting said software files of image header definitions to an interactive workstation computer system comprising memory-stored software applications for operating said imaging apparatus.

[c27] A drag-and-drop method for introducing informational attributes suited for selective inclusion within image headers that are selectively storable in a database together with pixel data of associated images produced by

an imaging apparatus, said method comprising the steps of:

- (a) selecting a defined informational attribute or a defined informational attribute component from within a first field delimited on a screen of an interactive computer system comprising software for creating and modifying defined informational attributes and also simulating application software driven operation of the imaging apparatus;
- (b) moving the selected informational attribute or attribute component from said first field and across said screen to a second field delimited on said screen;
- (c) releasing said selected informational attribute or attribute component so that said selected informational attribute or attribute component remains situated within said second field on said screen;
- (d) repeating steps (a) through (c) until an aggregate of informational attribute components sufficient for newly creating or modifying at least one informational attribute remains situated within said second field;
- (e) selectively setting operative parameters for said informational attribute components included in said aggregate for the purpose of newly creating or modifying at least one informational attribute;
- (f) utilizing said interactive computer system for simulating application software driven operation of said imaging

apparatus to thereby test each newly created or modified informational attribute for desirability and compatibility with application software; and

(g) selectively including each newly created or modified informational attribute in a memory-stored updatable table of defined informational attributes and defined informational attribute components suited for selective inclusion within image headers.

[c28] A drag-and-drop method according to claim 27, wherein said first field includes at least one plurality of defined informational attributes or defined informational attribute components at least partially derived from said memory-stored updatable table of defined informational attributes and defined informational attribute components.

[c29] A drag-and-drop method according to claim 27, wherein said second field includes a static design time container for newly creating or modifying at least one informational attribute.

[c30] A drag-and-drop method according to claim 27, wherein said interactive computer system includes a processor, a display monitor, a keyboard, a pointing device, and visually oriented application development software, and wherein steps (a) through (c) are primarily accomplished

by utilizing said pointing device.

- [c31] A drag-and-drop method according to claim 27, said method further comprising the steps of:
- (h) generating software files of image header definitions from said table of defined informational attributes and defined informational attribute components;
 - (i) transporting said software files of image header definitions to an interactive workstation computer system comprising memory-stored software applications for operating said imaging apparatus; and
 - (j) utilizing said interactive workstation computer system for executing said software applications to thereby deliver operation control signals to said imaging apparatus, acquire raw data of digital images produced by said imaging apparatus, process said raw data, read said software files of image header definitions, generate image headers that selectively include informational attributes as specified by said software files, display said image headers together with associated digital images indirectly produced by said imaging apparatus, and selectively store said image headers together with pixel data of said associated digital images in the database.